The Newsletter
of the Society
of Actuaries
Vol. 30, No. 8
October 1996

The Actuary

Anna Rappaport heads slate of newly elected officers, board members

Anna M. Rappaport is the 1996-97 president-elect of the Society of Actuaries. Rappaport, a principal of William M. Mercer Inc., Chicago, will take office at the October 29 annual meeting in Orlando, Fla. Her term as president of the SOA will begin the following October. She currently serves as an elected member of the Board of Governors and has served as treasurer (1974-77) and vice president (1983-85).

Inside this issue

Summing up her SOA career focus in the candidates' interviews published in the June 1996 issue of *The Actuary*, Rappaport said, "I've been very concerned with change: social change, economic and demographic change, and its impact on financial security systems." She also has worked extensively on changing the education system to help actuaries of the future meet those challenges.

Rappaport has been a member of the Futurism, Pension, and Non-traditional Marketing Sections of the SOA and is a frequent speaker at SOA meeting sessions and workshops. She was the organizer of the 1988 symposium, "The Future of Retirement." She also has served on several SOA committees related to health benefits, futurism, and actuarial education and is on the editorial board of the new SOA publication starting in 1997, *The North American Actuarial Journal*. Her work has been published in the *Harvard Business Review*, *Best's Insurance Review*, *the Employee Benefit Journal*, and others.

Asked for her vision of the SOA 10 years from now, Rappaport said she would like members to have a much greater impact on certain national issues, such as solutions to problems with Social Security and Medicare. She believes actuaries have much to contribute to the public discourse and said she would work for increased public recognition of the profession.

Anna M. Rappaport
President-elect

New vice presidents

Newly elected vice presidents also begin their two-year terms in October. They are:

- Donna R. Claire, president, Claire Thinking, Dix Hills, N.Y.
- A. Norman Crowder, III, president, A.N. Crowder Corp., Darien, Conn.
- James J. Murphy, national group actuarial practice manager, Howard Johnson & Co., Seattle

They join current vice presidents Yuan Chang, John J. Palmer, and Patricia L. Scahill, who serve through 1997.

Board members

Elected to three-year terms on the Board of Governors are:

- David N. Becker, vice president and chief actuary, Lincoln National Life Insurance Co., Fort Wayne, Ind.

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The Actuary

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Robert H. Dobson
Editor responsible for this issue

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EDITORIAL

A time for predictions and a strategy for life

by Robert H. Dobson

Ah, fall. Time for football, the World Series, and elections. And time for another restructuring of the actuarial examinations. It's even time to peer into the future of health care again. In this editorial, your fearless associate editor will offer up predictions in each of these areas.

I can handle the first three topics by quoting my friend Tom Attaway, a member of the Society: "Somebody won; somebody lost." Or, for events that have not yet occurred: "Somebody will win; somebody will lose." The winners will generally be happy; the losers will generally be gracious; and life will go on. There will be no articles in this issue on these topics (except for a small item on the "Lighter Side," asking for your U.S. presidential vote), but reading material is plentiful elsewhere.

Actuarial exams are, of course, never as hard as they used to be. I can predict that untold hours of hard work will be devoted to the redesign of the education and examination system this time around, as they have been in each of the prior changes. This effort will include both volunteer and SOA staff time. Some students will think the changes are great, and some will complain. Some will continue to pass exams; others will not; and life will go on. An article concerning the new system appears in this issue.

The only certainty in health care is constant change. The drastic reforms proposed earlier have died away for the current time. The relatively easy reforms we could all agree on (the Kennedy-Kassenbaum bill) have passed and been signed into law. (See the article on page 8.) New ways of managing care, such as disease management, are being discussed and tried. (See the article on page 7 by Brent Greenwood and David Epstein.) And, physicians are continuing to criticize the old ways of managing care, though not really understanding them (See "AMA" box on page 2). Some will prosper in the new health care environment; others will not; and life will go on.

To all, I offer this strategy for life:
"Never die with anything good left in the wine cellar."
Followed by its obvious corollary:
"Always keep something good in the wine cellar."
And how is the Nouveau Beaujolais?

Kalman joins editorial board

The Actuary welcomes Craig S. Kalman, health actuary for the Missouri Department of Insurance since 1994, to the editorial board. He will serve as assistant editor, working with Bob Dobson, associate editor. His first article appears in this issue on page 4.

Kalman, a graduate of Drake University, achieved his ASA designation in 1986. He is a member of the Health, Computer Science, and Education and Research Sections. He telecommutes from his home in the St. Louis area, going into the office in Jefferson City about one day a week. This arrangement works well for him, since his wife, Sheryl L. Kalman, is an actuary at the GENELCO subsidiary of General American Life Insurance in St. Louis, and they have a 6-year-old child in school.

AMA criticizes actuarial averages

by Robert H. Dobson

The July 15 issue of the *American Medical News* reports on a discharge policy adopted by the American Medical Association (AMA) at its annual meeting. In an article, "Delegates want discharge decisions left to doctors," a section titled "Problem with actuarial averages" states:

> Joanne G. Schwartzberg, M.D., AMA director of geriatric health,...said insurers and managed care organizations too often set discharge criteria based on "actuarial averages, simplistic formulas and ideal situations," which don't address the needs of a majority of patients.

This appears to be, at least in part, an attack on guidelines used by insurers across North America. These guidelines often are not based on actuarial averages, but rather on observed best practices of managed care organizations. An example is a set of guidelines developed by my employer, Milliman & Robertson, the "M&R Healthcare Management Guidelines™." They were developed by physicians, not actuaries, yet they seem to fit within the focus of the AMA's criticism.

Guidelines such as these are, however, based on the uncomplicated patient and require an adequate managed care infrastructure, so that services such as home health care are available.

It would be interesting to hear how actuaries working with other discharge criteria view the criticism.

Expansion of the profession

by Sam Gutterman
1995-96 President, Society of Actuaries

During the past year, I have written several editorials for *The Actuary*. My intention was to challenge your thinking and provide some incentive to act. In this column, my last as SOA president, I'm continuing on that path with some thoughts about the need to broaden and add depth to our profession. If we don't act soon, we could face a critical devaluing of our status and worth.

I believe it is crucial to the actuarial profession and individual actuaries that we expand the scope of our profession, in both its breadth and depth. It can be broadened by adding new practice areas or enhancing existing ones. Its depth can be increased by providing valuable additional services or contributions to current employers or clients.

Why do I think we have a problem? Here are some indicators:

- Too often, an insurance company will hire a non-actuary for a position when the company could be better served with an actuary in the job.
- An insurer will ask a non-actuary to conduct a project that an actuary could do just as well — and probably better.
- Many pension actuaries serve as highly regarded valuation or regulatory experts but don't get the opportunity to serve as benefits consultants — though they're qualified to do so.

In the past, our profession has ceded significant practice areas to others. To name a few: derivatives, demography, operations research, Bayesian statistics, and biostatistics. We can no longer afford to continue to develop the intellectual core of an area, then leave it to others to practice. The Institute of Actuaries in the United Kingdom will offer a certificate in derivatives next year. Should the Society of Actuaries do something similar?

I am not saying no progress has been made. For example, the health and finance areas have expanded by adding new services and new clients. In finance, our skills in asset/liability management may serve as an entrée to other areas.

The Society of Actuaries has initiated several efforts in the past few years to expand our profession:

- **Education redesign.** As actuarial education puts more emphasis on unstructured problem solving, it will offer future actuaries a better base from which to move into new practice areas.
- **Sections.** The Actuary of the Future Section has developed a number of programs, communications, and seminars to increase the actuary's knowledge of new practice areas. Other Sections and the Management and Personal Development Committee also have strived to broaden the horizon and skill set of the actuary.
- **Emerging practice areas:** The Finance practice area has been charged with the responsibility of coordinating task forces for emerging practice areas. Although actuarial work has been brought into the mainstream of finance and investments, I believe we have only scratched the surface of our potential contributions. We now have a Banks and Financial Institutions Task Force, a Capital Projects Task Force, and a new task force on Actuarial Counselling (personal finance), all formed to identify potential new areas for actuarial practice and to develop plans to open these fields to actuaries. The Canadian Institute of Actuaries also has formed a task force to address non-traditional areas. I challenge you to volunteer new ideas for task forces, particularly

(continued on page 9)

Understanding the regulatory actuary

by Craig S. Kalman

Over time, we've increasingly seen actuaries stride out of the "back room" and into the limelight. Unfortunately, that backroom image still seems to hold for regulatory actuaries.

As a group, regulators are still in the background. They are often transparent to many in an insurance company, noticed only when an examination is underway. Those dealing with regulators regularly, such as pricing actuaries and compliance personnel, may only see the surface layer of their work.

Part of the solution is in the hands of regulatory actuaries. By increasing communications about what should be contained in filings, they can help insurers get approvals faster and reduce their own workload.

Current environment

A look through the *Directory of Actuarial Memberships* shows that in the United States, 31 state insurance departments employ 154 actuaries. They represent all insurance specialties: life, health, and property/casualty. Most of the states with actuaries have 1 to 4 actuaries, as shown in the table on this page.

Being a regulatory actuary is not much different from being an insurance company actuary. Both have time constraints that affect priorities. Actuaries in small companies are expected to be quite diverse in their abilities, while those in larger companies can become highly specialized. The same is true for regulatory actuaries.

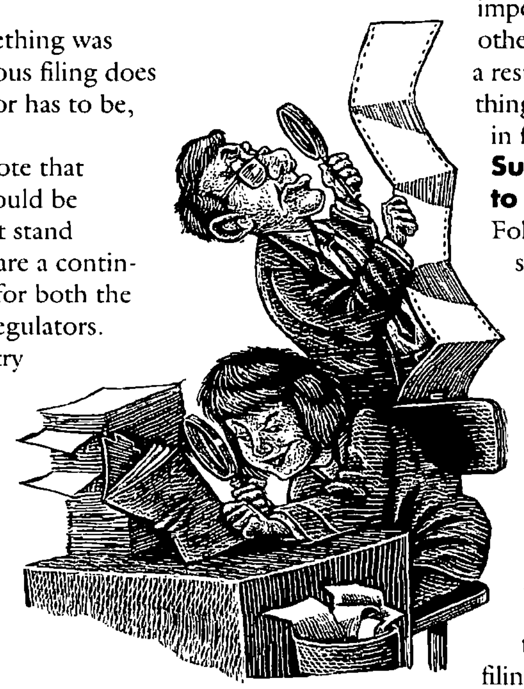
Facts and myths

Here are some facts to challenge myths I've heard about regulatory actuaries:

1) Our salary is *not* based on the number of correspondences or questions asked about a filing.
2) A letter asking for more information is not a disapproval.
3) Just because something was acceptable in a previous filing does not mean it will be, or has to be, acceptable later.

I once heard a quote that applies: "The law should be stable but should not stand still." Filing reviews are a continual learning process for both the companies and the regulators. The insurance industry — from both company and regulatory perspectives — is not static, it's dynamic. Our knowledge base comes from what each of us has done in the past, what our employers have done in the past, and what we've learned from others. Any actuary — insurance company or regulatory — will make improvements to his or her techniques over time.

4) Most insurers say that it is aggravating to live with 50 sets of filing needs. On the flip side, regulators deal with different information formats from hundreds of companies. We have 130 insurers in Missouri who have Medicare Supplement business. When requesting a rate increase, each company provides similar information but in a different format.



Am I advocating total standardized reporting on everything? No. I think it removes creativity. In addition, each state considers some aspects more important than others. This may be a result of different things they've seen in filings over time.

Suggestions to companies

Following are some suggestions to companies to help expedite approval processes. These are based mostly on Medicare Supplement rate filings, but they apply to most rate filings, and even product filings.

- *Regulators have only what is on paper in front of them to review the filing.* To ensure that a filing is complete, have the filing peer reviewed before it is submitted. The reviewer should be someone who understands the context of the filing but was not involved in its development. He or she should be able to spot missing information, inconsistencies, or calculation errors before the filing is sent out.
- *Review any filing-related materials provided by regulatory authorities.* An example is the NAIC Medicare Supplement Compliance Manual. This provides a framework for companies and regulators to follow. If regulators asked for missing information more frequently, companies might avoid repeated incomplete filings.

Actuaries in State Insurance Departments

Number of Actuaries	0	1	2	3	4	7	8	11	12	13	36
Number of States	19	6	8	6	4	1	1	2	1	1	1

(continued on page 15)

Elections (continued from page 1)

- Jay M. Jaffe, president, Actuarial Enterprises, Ltd., Highland Park, Ill.
- Neil A. Parmenter, senior actuary, The Principal Financial Group, Des Moines
- Julia T. Philips, health actuary, Minnesota Department of Commerce, St. Paul
- Bradley M. Smith, consulting actuary, Milliman & Robertson, Dallas, who also will serve as Director of Publications
- Kurt K. von Schilling, vice president and chief actuary, Mutual Life of Canada, Waterloo, Ontario

The newly elected Board members join sitting members: Nancy A. Behrens, William F. Bluhm, Morris W. Chambers, Sue Ann Collins, Cindy L. Forbes, Peter Hepokoski, Anne M. Katcher, Philip K. Polkinghorn, Richard G. Schreitmueller, Arnold F. Shapiro, Michael M. C. Sze, and Mark A. Tullis.

Section council elections

New members of each of the special interest Section councils were also elected. Winning election to three-year terms on the Section councils are:

- Actuary of the Future:
  - John C. Christensen
  - Dorn H. Swerdlin
  - Douglas S. Van Dam
- Computer Science:
  - Larry A. Curran
  - Mark T. McAndrews
  - Zygmunt S. Swistunowicz
- Education and Research:
  - John A. Beekman
  - Esther Portnoy
  - Irwin T. Vanderhoof
- Financial Reporting:
  - Edward L. Robbins
  - Howard L. Rosen
  - Shirley Hwei-Chung Shao
- Futurism:
  - Kathleen S. Elder
  - Paul D. Laporte (1 year)
  - Lawrence D. Miller
  - Alan L. Mills
- Health:
  - Lee Eric Launer
  - Thomas F. Wildsmith
  - Dale H. Yamamoto
- International:
  - Richard J. Geisler
  - Peter K.Y. Luk
  - Bruce D. Moore
- Investment:
  - Francis P. Sabatini
  - Klaus O. Shigley
  - Joseph H. Tan
- Nontraditional Marketing:
  - Robert J. Butler
  - Richard C. Dutton
  - Edward F. McKernan
- Pension:
  - Joan Boughton
  - Martha A. Moeller
  - Amy S. Timmons
- Product Development:
  - Philip J.T. Cernanec
  - Deborah K. Sloan
  - Edward A. Turner
- Reinsurance:
  - Jeffrey N. Altman
  - Michael D. Lachance
  - William R. Wellnitz
- Smaller Insurance Company:
  - Christian J. DesRochers
  - Norman E. Hill
  - Paul J. Sulek

Sections elect officers at the first meeting of the year. Many plan to hold their first 1996-97 meeting at the annual meeting in Orlando.

New Vice Presidents


Donna R. Claire

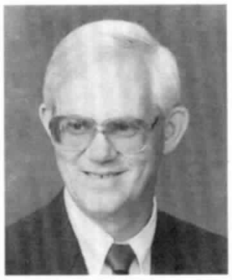

A. Norman Crowder, III

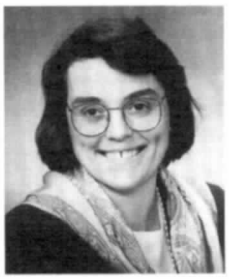

James J. Murphy

New Board Members


David N. Becker


Jay M. Jaffe


Neil A. Parmenter


Julia T. Philips


Bradley M. Smith


Kurt K. von Schilling

Health care mergers and acquisitions can mean expanded actuarial roles

by Robert H. Dobson

Those who follow the business press know that the health care industry is experiencing a severe case of merger mania. Providers of all types — insurers, HMOs, and other managed care companies — are all affected.

The phenomenon is so widespread that it has even touched Blue Cross and Blue Shield plans. Some might argue that the Blues have been in the merger game for a long time, because formerly separate Blue Cross companies have been merging with Blue Shield companies for many years. Multiple plans within states have also merged. In fact, even the national associations were once separate. (The Blue Cross and Blue Shield Association does not manage the plans, but it controls the license that plans use to identify themselves as an official Blue.)

The Blue Cross and Blue Shield Association recently approved plans' ability to convert to for-profit status, which has increased the stakes considerably. Current mergers and acquisitions have resulted in multi-state conglomerates with subsidiaries as diverse as brokerage firms, software companies, and other for-profit entities such as HMOs and medical service organizations.

Actuaries have a role in these activities, but I believe that role could and should be larger. I've been involved in several health care mergers, but my company's most recent involvement — the $299.5 million transaction between HCA/Columbia Healthcare Corporation and Blue Cross and Blue Shield of Ohio — has been especially interesting. It has attracted much attention, because it is the first time that an entity outside the Blue system would, in some ways, own the assets and membership of a Blue plan. It was a very interesting transaction, but of course, confidentiality considerations preclude my writing about any specifics. I can, however, suggest areas that are possibilities for further actuarial involvement in future transactions.

Preparing the appraisal

Perhaps the most common actuarial role in mergers and acquisitions is preparing an actuarial appraisal. The results of such appraisals do not necessarily produce a market value, any more than an appraisal of your home means you can actually sell the house for its appraised price. This is where investment bankers come into the picture. These firms form opinions on the fairness of a transaction, taking into account many elements not recognized in an actuarial appraisal, including prices paid in similar transactions.

Some life actuaries have been employed by investment banking firms. Actuaries with health care experience should consider investment banking a natural growth area. Actuaries have honed their skills in the insurance industry in evaluating the financial implications of business risks. These skills mesh well with merger situations. We need to make the health business community more aware of these skills.

Impact on policyholders becomes news item

Because Blue Cross and Blue Shield of Ohio is a mutual insurance company, my firm also provided an opinion on the possible impact of demutualizaton on policyholders. We also commented on certain elements of a reinsurance arrangement that was proposed as part of the transactions.

Any merger that affects coverage of large numbers of policyholders leads to media attention, and my firm found itself involved with the press. The BCBSO-Columbia/HCA merger affected 65,000 policyholders and received national news coverage.

Policyholders were sent detailed information and a special proxy card to vote on the transaction, which had to be postmarked by August 19. BCBSO produced a half-hour television program that aired a few days before that date in Cleveland, Columbus, and Toledo. I was asked to be on the show to talk about our firm's analysis used in valuing the company. Former newscasters interviewed me, spokespersons from the companies involved, and other experts, who gave their views on the reason for the merger and its impact on health care in Ohio.

Get involved early

Even better than coming into a merger transaction at a certain point, an actuary adds value by being involved at the beginning. Actuaries can participate in the original structuring of the transaction and evaluate and compare multiple proposals. Later in the process, they can testify at public hearings. The modeling tools actuaries have developed to allow detailed analyses of the options and the risks associated with them are a natural fit.

Actuarial involvement in health care mergers is important and could be even more so. It will be interesting to watch the long-term results of some of the transactions that have had little or no actuarial involvement. If the underwriting cycle is indeed worsening, as many health actuaries believe, will all of these deals still look good five years from now?

Actuaries are already well prepared to handle some aspects of mergers and acquisitions; other aspects may require some specialized experience or training. I encourage more actuaries to prepare themselves, and then seek out these opportunities.

Robert H. Dobson is consulting actuary with Milliman & Robertson in Tampa. He is an associate editor of *The Actuary*.

Is a physician in your future?

by Brent Greenwood and Dr. David Epstein

To date, insurers and government have taken the "supply side" approach to reforming the nation's health care system. Cost containment has relied primarily on managing the utilization of health care services and negotiating reduced payments for services provided. These approaches have taken the form of discounted fee schedules, per diem arrangements, capitation, and utilization management programs. Rarely do these different forms of cost containment connect and relate to each other across the spectrum of health care management.

However, supply side strategies usually do not address the impact of increased access to care, advances in medical technology, and the apparently insatiable appetite for health care services by Americans covered under insured health plans. With government promising increased access at lower prices, successful health care reform cannot take place until the demand for health care services is addressed. As the health system evolves to the "demand side," actuaries will need to understand how this will impact their analysis of health care expenses and operations. Actuaries will also quickly discover the need to work with physicians to better understand the impact of these new programs.

The spectrum of health care management

Reducing aggregate demand for health care services requires comprehensive medical management. This includes reducing individual patients' disease burden, managing acute care (inpatient) crises, and managing (ambulatory) chronic illness.

Historically, insured managed care plans have focused primarily on the acute-care phase because as much as 40% of the health care dollar was spent for inpatient care. Health plans have been successful in reducing inpatient costs through aggressive contracting for inpatient services and pre-certification and concurrent utilization review programs, including fixed reimbursement strategies (e.g., capitation, percent of premium, and fee schedules).

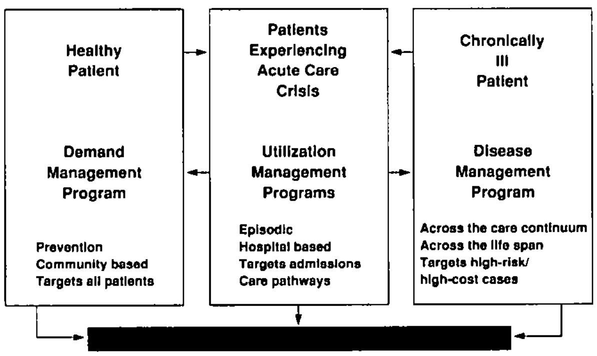
Now, cost pressures are likely to escalate due to the following trends:

- Consolidation of provider systems, exerting more price pressure on payers and purchasers
- Increasing volume of services
- More expensive medical technology

Comprehensive care management

Comprehensive care management represents a revolutionary shift in health care delivery. It changes the focus from crisis management and acute disease interventions to a public health approach that promotes prevention, education, and periodic health care. The goal is to provide individuals information and timely interventions to reduce the future need for more intensive services.

Comprehensive Care Management



The three components of a comprehensive care management program are:

- Demand management
- Utilization management
- Disease management

Few plans have integrated all three components into an effective care management program.

Demand management

Demand management challenges health plans to understand the health characteristics of the populations for which they are responsible and to design interventions to reduce the disease burden of those populations. Successful programs offer enrollees stress prevention, improvement of health behaviors, promotion of proper self-care, and education on using the health care system appropriately. These are accomplished through patient communications and wellness programs, health risk assessments, telephone-based triage and nurse advice lines, and drug compliance programs.

Utilization management

Despite demand management initiatives, patients will still need acute care services, and utilization management programs will continue to be an essential component of effective care management. Utilization

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What lies ahead: Kassebaum-Kennedy bill becomes law

by Jacqueline Bitowt
Public Relations Specialist

Now that the Kassebaum-Kennedy bill has been signed into law, what changes can actuaries anticipate? Insiders involved in the public debate are watching the states for their responses, because the future of individual health insurance plans will be determined at the state level.

Known formally as the Health Insurance Portability and Accountability Act of 1996, the bill's formation and passage rank as landmarks by Capitol Hill watchers. An article in the August 5 issue of *National Underwriter* by Washington editor Steven Brostoff called Kassebaum-Kennedy an "historic, unprecedented agreement" because of its joint Republican-Democrat sponsorship. Of equal or greater importance is that the bill is the first major health legislation to become law since Medicare was established in 1965. Also, the bill received unanimous approval by the Senate.

Actuaries undoubtedly had some impact on the Kassebaum-Kennedy bill as it moved through Congress. In a speech to the American Academy of Actuaries, bill co-sponsor Sen. Nancy Kassebaum (R-Kan.) praised the profession for its work in health care and pensions. "I marvel at what actuaries do, the information that you provide, and the objectivity and credibility that you bring to the public policy debate," she said.

An Academy-sponsored work group, among others, conducted a study earlier this year to make projections for the bill's possible effect on individual health care insurance premiums. It is here that actuaries will see the most impact. Work group chairman Tom Stoiber, member Cecil Bykerk, and Tom Wildsmith of the Health Insurance Association of America look at what lies ahead for actuaries as the health insurance market and its regulatory environment move toward the law's July 1, 1997, effective date.

"The key is whether a state is operating under its own law or the new federal law," said Stoiber, a senior consultant for Coopers & Lybrand. A state government can request a waiver from the group-to-individual guarantee issue provisions from the federal government when state law provisions meet or exceed those of Kassebaum-Kennedy. A state can petition for a waiver at any time, but states must do so by April 1, 1997, to avoid the July 1 start of the new federal law. Missing the April 1 deadline could delay the start of a state's new legislation — meaning that actuaries could be dealing with existing state law until July 1, then the federal law for several months and, finally, the new state law.

Stoiber and other actuaries point out that the issue at stake is pricing: How will the risk be spread for the newly eligible plan applicants — who are, almost by definition, adverse candidates for coverage?

Observes Stoiber: "The law does not specify pricing requirements, but it has many backdoor elements. Will pricing be determined primarily by the companies, by states, or by other regulators? There's a lot of work to be done, and no guidelines."

Says Wildsmith, "It's a real public policy dilemma as to which way to go on spreading the risk." He is policy research actuary for the HIAA, which also was active in the public debate on Kassebaum-Kennedy.

"The questions are: Will companies be allowed to rate the newly eligible based on their own expected health costs? If so, will they be able to afford it? And if not, who will bear the cost? The federal law is unclear," Wildsmith pointed out. "Will the individual pay most of the freight, will the market, or will a state's entire tax base [through government subsidy]?"

Observers agree that a legal guarantee of access to insurance without a guarantee of affordability is no guarantee at all. That's why state actions in the following months will be so important — and why actuaries involved in the debate over Kassebaum-Kennedy believe actuaries now must focus on discussion over state legislation.

"One of the things on the front end for actuaries is to sit down with their company strategists to see what roads they should go down in the states," said Cecil Bykerk, executive vice president and chief actuary, Mutual/United of Omaha Insurance Co. and member of the Academy work group.

"Before the states decide, the companies have some ability to go in and counsel — lobby, if you will — the governor or whoever makes the decision."

Wildsmith points out that actuaries can contribute greatly to state legislative discussion. "We could certainly help the state decision-makers look at the trade-offs between access and affordability," he said. "Actuaries of all stripes should lend their expertise.

"Actuaries need to seek out forums for discussion. Even though actuaries might represent different constituencies, they can still come to agreement on some core methodologies and some key assumptions. In whatever forum actuaries appear, they need to make clear what the differences are between estimates, why they arise, and what those differences imply about the policy decisions that must be made."

Prepare now for participation in state debates. With Kassebaum-Kennedy on the law books and the April 1 deadline less than six months away, "states might accelerate their own reform legislation," observed Stoiber. "We could see a dramatic flurry of activity."

New law at a glance

Here's an overview of the provisions under the Health Insurance Portability and Accountability Act of 1996:

- Health plans cannot deny coverage nor impose preexisting condition exclusions for more than 12 months for any condition diagnosed or treated in the previous six months. Also, insurers cannot impose any new preexisting condition exclusions on anyone who maintains continuous coverage (i.e., no more than a 63-day gap).
- Health insurers offering health insurance in the individual market must provide individual policies for those who leave jobs voluntarily or involuntarily and for their dependents. This applies only to those who maintain continuous coverage for the preceding 18 months and who are no longer eligible for COBRA coverage.
- The law prohibits insurers from refusing to sell plans to small employers (2 to 50 employees).
- The deductibility of premiums for the self-employed increases, over time, from 30% to 80%.
- Tax incentives are offered for the purchase of long-term care insurance.

Insurers operating in states where the federal law applies (that is, the state has not obtained a waiver) can meet the group-to-individual portability requirements in one of three ways, observes Tom Stoiber, senior consultant for Coopers & Lybrand and member of the American Academy of Actuaries work group advising Sens. Kassebaum's and Kennedy's staffs. Stoiber notes that the federal standard calls for individual health insurers to guarantee issue of all the products they sell, but the law does allow insurers to choose between two other options as well:

Option 1: Offer the two most popular plans. Here, the implication is that risk would be spread across all purchasers of those two plans. However, Stoiber points out, "This could lead to a rise in the premiums of those two plans, making them less popular. Actuaries would have to continually monitor plans for their ranking."

Option 2: Offer a low-cost plan and a high-cost plan. The premiums can't have more than a 15% difference between them, and the cost of benefits must meet an actuarial equivalent test on criteria that are not clearly specified.

Expansion (continued from page 3)

if you are in a new field yourself. You might like some company.

- **Invited papers.** Through the new *North American Actuarial Journal,* we are encouraging papers on the application of traditional actuarial techniques to new practice areas and of non-traditional techniques to current areas of practice. In addition, we encourage actuaries to submit papers to non-actuarial journals to spread the word that actuaries can contribute ideas and approaches to a wide range of disciplines.
- **New skills.** The new text, *Actuarial Aspects of Financial Theory,* being developed by the SOA Foundation, will be distributed to members next year. It will offer actuaries a new set of marketable skills.

New potential practice areas for actuaries are easy to identify but may be difficult to enter. I saw an example in an August 10, 1996, *Economist* article on European bank lending. It discusses a new approach to analyzing credit risk and says the method parallels "the calculation of insurance risks by actuaries." Are we up to the challenge of entering a field using "our" approach now dominated by others?

We must strive to expand our professional reach in this changing world if we are to continue to flourish. If we do not change, technology and other professionals will encroach on our current areas of practice. In fact, if we don't add value to our employers and clients, we may not remain employed. If we are not seen as solvers of new or different business problems, our profession will stagnate.

Expansion is not the responsibility of the SOA alone. Recruiters can try to place actuaries in new areas. Academics can help students seek employment in non-traditional areas, using the skill set of the actuary to provide a valuable perspective for many types of employment while still keeping their actuarial identity.

However, the ultimate responsibility lies with the individual actuary to each day expand your own areas of practice. Continuing education will become even more important in the future. The annual meeting in Orlando this month offers many sessions to add knowledge and stimulate your imagination on how to expand your personal future and that of the profession. At the Tuesday, October 29, Presidential Luncheon, I'll share more thoughts on "The Redesign of the Actuary." I hope to see you there.

E & E report offers clearer picture of proposed redesign

by Linda Heacox
Public Relations Specialist

A clearer picture of the ultimate design of the new education and examination system is emerging as the Board Task Force on Education readies its proposal for submission to the Board of Governors. Since the 1994 creation of the task force, certain key principles about the basic philosophy of the new system and its goals have guided the development process.

The focus of the project has been to develop a system of education that teaches the application of actuarial science and its principles. This will broaden actuarial opportunities in the future.

The August mailing to all SOA members reports that some of the most important development milestones have been reached. In addition to presenting the design of the courses in the new system, the report addresses:

- The philosophy of the professional development course
- The lists of preliminary subjects a candidate will be assumed to have taken from other educational sources
- Principles to guide awarding of credit during the transition phase between the old and new systems

Responses to a survey included in the August report were due October 4, and they will be carefully reviewed, said Marta Holmberg, SOA education executive. However, unless responses to the survey yield big surprises about the thinking of the membership, the task force expects to continue development more or less along current lines, say Holmberg and Cecil Bykerk, chair of the task force.

Professional development

A key step in the development process was the establishment of the professional development section of the curriculum. The intention of the task force was to move candidates away from the "education through examination tradition" toward a more interactive and, the task force hopes, more meaningful learning experience.

Under the proposal, 50 hours of education, 25 of which must come from SOA-approved activities such as seminars and workshops, have to be completed in a two-year period. Candidates must first select an FSA to act as an advisor/mentor through the process. Bykerk said the task force has anticipated some of the potential snags early. "Candidates who don't have access to an advisor can apply to the SOA, which will assign one. The advisors will guide candidates in designing their own study programs."

Bykerk also said the task force anticipates some candidates may need examples of acceptable study plans. "We intend to develop prototype plans to aid them," he said.

The chief difficulty, according to the report to members, is "the difficulty of proving the absolute quality of the knowledge level attained by each and every candidate. The selections made by each candidate will vary, but the validation requirements and the professionalism required of the candidate should ensure that each candidate meets an acceptable standard."

Holmberg said the task force is considering some type of oral exam, with the candidate defending his or her professional development work as the culmination of the process. Up to 50% of the required professional development hours may be earned through an additional Course 8, the Chartered Financial Analyst designation, the Enrolled Actuary-2 exam, or a significant research paper.

Preliminary courses

From the start, the task force has intended to eliminate testing of subjects candidates will learn elsewhere and limit testing to subjects that form the essentials of an actuary's education. With the August report, the task force has determined what subjects fall into this "preliminary" category.

In math, these preliminary subjects are calculus, probability, introductory micro- and macro-economics, linear algebra, differential equations, numerical analysis, and statistics. In business, they are principles of marketing, principles of management, introductory accounting, business law, and applied computer skills (basic analytical tools such as spreadsheets).

"It isn't that you don't need these subjects," said Holmberg. "We are assuming a knowledge of the math subjects on the first few exams and a knowledge of the business courses in the later exams. Knowing these subjects will be very helpful in passing the exams, but no longer necessarily explicitly tested by us."

To attract candidates from a variety of backgrounds in addition to actuarial science and mathematics, the task force has also changed the first two exams. "The first two examinations may well change the mix of candidates writing the early exams," the report states. "For example, pure math students will see a change early in the process, with the new emphasis on risk assessment and risk management. In addition, more business and finance students may start taking these exams."

In response to reaction from the membership, the task force has changed its original intention to test math skills to a lesser extent than the current exams 100 and 110 do. Instead, the proposed Course 1 exam will put questions within the context of risk assessment and management, but calculus and probability will be explicitly tested as rigorously as they are now.

Transition principles established

"Keep taking required courses," said Holmberg in answer to the most asked question by candidates already writing exams. Required courses are expected to correspond somewhat to the new courses being offered and therefore, credit will be transferrable.

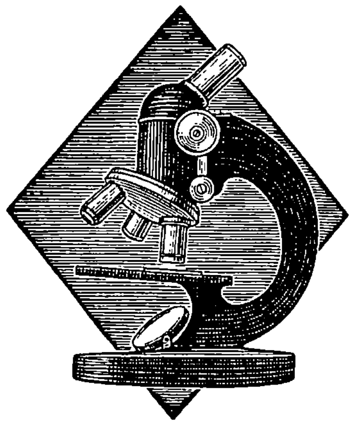
Other general principles for giving credit for previously taken courses and exams during the transition phase are:

- New and old courses will not be concurrently administered.
- Credit will be given for new courses that correspond to a suitable extent with old ones.
- Electives generally won't correspond.
- Required courses in combination will correspond sufficiently to earn credit.
- Credit for many elective courses, if not used elsewhere, will be applicable toward satisfaction of the professional development requirement.
- Candidates will have at least three sittings for each course.

Holmberg and Bykerk said the task force intends to give candidates a full three-years' notice of the details of the transition rules.

SOA accepted as AAAS member

by Irwin T. Vanderhoof



In recent years, the role of the actuary as a business person has captured center stage. Some actuaries believe that the business school background is now the most appropriate base for actuarial studies. The actuary who was trained as a mathematician or physical scientist seems like an anomaly to them, a quaint figure from the past.

This is a strange turn of events from several points of view. First, we can all note that many of the actuaries who make the greatest contributions to progress in the field, and are honored for doing so, have degrees in the sciences rather than business. Second, there is no good reason to give away half our profession. Actuaries have traditionally been both scientists and business people — and that combination is part of what has allowed the profession to continue to exist. If we are only business school people, then we could be replaced by MBAs and accountants.

The Board of Governors of the Society of Actuaries recently achieved a formal recognition of our role as scientists. The SOA has applied for and been accepted as an affiliate of the American Association for the Advancement of Science (AAAS).

The American Association for the Advancement of Science was founded in 1848 and now has about 140,000 members from 287 affiliated scientific societies and academies of science. The association is divided into 24 sections, running from agriculture (Section O) through medical science (Section N), and ending with statistics (Section U). The SOA has affiliated with Section K (social, economic and political sciences). This is one of the smaller sections. Only about 1,500 members of the AAAS have chosen this as one of their three possible sections for membership.

The Society of Actuaries pays no fee for this affiliation, but members of the SOA are solicited for membership in the AAAS. Besides being able to vote in elections, members receive the weekly publication, *Science*. This is an interdisciplinary journal, perhaps the most prestigious one in the United States. I encourage members of the SOA to join the AAAS as part of their membership in the scientific community. The annual membership fee is $102. Applications for individual membership can be obtained from the AAAS office (202/3260-6450; fax: 202/842-1065).

Here's another intriguing possibility. As an affiliate, we have the right to propose a scientific program for the annual meeting of the AAAS. Work is in progress to develop such a proposal for the annual meeting in Philadelphia in 1998. Various options are being considered, but one strong candidate is the topic, "Projection of improvements in mortality rates and the implications for the Social Security systems of Canada, the United States, and Mexico." This topic would showcase our contributions as scientists who are concerned about the public good.

News media interest in the AAAS annual meeting tends to be high, offering a significant opportunity for the SOA to become better known.

The SOA's affiliation with the AAAS is an important step in the affirmation of the future of the actuary as both a business person and a scientist.

Irwin T. Vanderhoof is clinical professor of finance at the Stern School of Business, New York University, and president of Irwin T. Vanderhoof Actuarial Services, Towaco, N. J.

Update on SOA scientific publications

by Linda Delgadillo
SOA Director of Communications and Administration

Last year, the Board of Governors approved a new Scientific Publishing Plan. The plan includes:

- Creating a Monograph Series
- Replacing the *Transactions*, an annual publication, with a quarterly journal, *The North American Actuarial Journal*
- Publishing the *Transactions Reports* annually

The implementation of this plan is well underway.

Monograph Series

The Monograph Series has been designed, and the first three monographs have been published. They are:

- "A Study of Public Employee Retirement Systems," by Michael J. Samet, Timothy P. Peach, and W. Paul Zorn. The cost is $125 for the private sector and $75 for the public sector.
- "Study of Public Financial Guarantee Programs," by Price Waterhouse LLP, Office of Government Services. Cost is $75.
- "Valuation of Interest-Sensitive Financial Instruments," by David F. Babbel and Craig B. Merrill. Cost is $55.

Three other monographs are in various stages of production. Michael J. Cowell, former editor of *The Actuary*, has been named editor of the Monograph Series and is forming an editorial board to assist him.

Quarterly journal

The last volume of the *Transactions* will be published late in 1996. Long the Society's flagship publication, the *Transactions* is being replaced by the new *North American Actuarial Journal (NAAJ)*. The *NAAJ* will debut in January 1997 and will be published quarterly, allowing for more timely publication of research and ideas.

With the creation of the *NAAJ* comes many other changes. The Committee on Papers has been replaced by an editorial board headed by Dr. Samuel H. Cox, Jr., FSA. He is professor of actuarial science and risk management and insurance at Georgia State University, Department of Risk Management and Insurance, Atlanta. He also has taught at Michigan State University, University of Nebraska-Lincoln, and the University of Texas at Austin. He received his bachelor's and master's degrees in mathematics from Texas Christian University and a doctorate in mathematics from Louisiana State University.

The rest of the *NAAJ* editorial board comprises associate editors representing practice areas across the profession and across international borders. The associate editors are:

- Howard J. Bolnick, FSA, retired president of Celtic Life Insurance Company, Chicago
- Dr. Phelim P. Boyle, FCIA, FIA, director of Centre for Advanced Studies in Finance, professor in the School of Accountancy, University of Waterloo, Ontario
- Dr. Allan Brender, FSA, FCIA, principal, William M. Mercer LTD, Toronto
- Dr. Patrick L. Brockett, director of the Risk Management and Insurance Program, University of Texas at Austin
- Sergio Camposortega, President, Colegio Nacional de Actuarios A.C., Mexico
- Shane Chalke, FSA, MAAA, president, CHALKE/SS&C, Chantilly, Virginia
- Dr. J. David Cummins, editor, *Journal of Risk and Insurance,* Wharton School, University of Pennsylvania
- Charles S. Fuhrer, FSA, MAAA, pricing actuary, Blue Cross/Blue Shield, Washington, D.C.
- Dr. Hans U. Gerber, ASA, professor, University of Lausanne, Switzerland
- Jeffrey C. Harper, FSA, FCA, Tillinghast/Towers Perrin, Atlanta
- Dr. James C. Hickman, FSA, ACAS, emeritus professor and dean, School of Business, University of Wisconsin at Madison
- Dr. Donald A. Jones, FSA, MAAA, EA, professor, Mathematics Department, Oregon State University
- Dr. Harry Panjer, FSA, FCIA, professor, Department of Statistics and Actuarial Science, University of Waterloo, Ontario
- Dr. Esther Portnoy, FSA, associate professor, Mathematics Department, University of Illinois
- Anna Rappaport, FSA, MAAA, FCA, EA, managing director, William M. Mercer Inc., Chicago
- Dr. Robert R. Reitano, FSA, second vice president, John Hancock Mutual Life Insurance, Boston
- Michael Sherris, ASA, FIA, FIAA, senior lecturer, Actuarial Studies, Macquarie University, Sydney, Australia
- Klaus O. Shigley, FSA, EA, vice president, John Hancock Mutual Life Insurance, Boston
- Dr. Elias S. Shiu, ASA, Principal Financial Group professor, Department of Statistics and Actuarial Science, University of Iowa
- Dr. Gregory Taylor, FIA, FIAA, consultant, Tillinghast, Sydney, Australia

Other changes include eliminating the preprint system, which was established to release papers in advance of their annual publication in the *Transactions.* This allowed members access to the information in the papers and encouraged them to respond to the ideas presented through discussions. This is no longer necessary because the *NAAJ* is published four times a year. Early-release copies of papers will still be available, however, for $5 through the SOA Books and Publications Department. Discussions of papers will be published with the paper, if possible, and in subsequent issues within six months.

The papers review system also has been streamlined. In the past, papers were assigned by the chair of the Committee on Papers to the appropriate vice chair. The vice chair selected five members of his or her committee to review the paper. Each reviewer wrote an individual review and voted on whether to accept the paper, accept with minor revisions, accept with major revisions, or reject the paper. The lead reviewer then summarized the majority decision in a review, which was then sent to the vice chair and the chair. After their approval, it was sent to the author.

The papers review process for the *NAAJ* is still blind — that is, neither the referees nor the authors are informed of the others' identities. However, that is where the similarities end. Currently, papers submitted for possible publication in the *NAAJ* are assigned by the editor to an associate editor. The associate editor selects three subject experts—actuaries or non-actuaries—to review the paper. Referees are asked to write two reports: one for the editor and one for the author. The editor's report recommends accepting, revising, or returning the paper and states the rationale for the recommendation. The author's report allows referees to offer constructive assistance and feedback directly to the author.

The associate editor reviews the referees' reports and makes a recommendation (accept, revise, or return) to the editor. The editor, who also reviews the referees' reports, makes the final decision about the paper. In most cases, the editor agrees with the recommendations given, although he has the authority not to. The referees' reports are then sent to the author, along with a letter stating the decision.

These changes have many benefits:

- The time for the review process has been shortened by decreasing the number of reviewers from five to three.
- The quality of reviews is improved by allowing associate editors to choose anyone qualified to review the paper, rather than limiting their choices to members of a committee. Broadening the reviewer base discourages assigning reviews to the same people and generates fresh ideas.
- The simplified decision choices — accept, revise, or return — reduce confusion for reviewers and authors, especially if a paper needs to be revised. It no longer makes a difference if revisions are minor or major, nor does it affect the amount of time allotted to make the revisions.
- Authors have clearer and more positive feedback from direct communication with the referee. This eliminates the summary review.

Overall, the new process of reviewing papers is more user-friendly, both for authors and volunteers. This helps the *NAAJ* editorial board secure prompt and expert reviews.

TSA Reports

The *TSA Reports* will continue to publish experience studies and other committee reports. It will also include some standard items from the *Transactions,* such as the SOA presidential address, the annual financial report, and the obituaries. Douglas A. Eckley, a former editor of the *Transactions,* has agreed to serve as editor of the *TSA Reports.* He is with the Acacia Group in Washington, D.C., and divides his time between actuarial work and writing his Ph.D. dissertation on foreign currency exchange rate movements at George Mason University.

16 receive research grants

The Society of Actuaries recently awarded 16 research grants, with recipients representing a wide range of expertise and geographic locations.

CKER grants

The Committee on Knowledge Extension Research (CKER) awarded eight grants, ranging from $5,000 to $10,000, to winners of its Annual Actuarial Research Grants Competition. Twenty-five proposals were received this year. CKER grants fund new actuarial research and are open to academics, industry researchers, and practitioners whose research is not part of their employment.

CKER grant recipients are:

- Robert L. Brown, FSA, director of the Institute of Insurance and Pension Research, University of Waterloo, for "Is Social Security a Regressive System?"
- Evgeniy Chepurin, professor, Moscow State University, for "Statistical Analysis of Small Size Insurance Data Samples on the Basis of the Sufficient Empirical Averaging (SEA) Method"
- Jay M. Jaffe, FSA, president of Actuarial Enterprises, Ltd., for "The 1996 Accidental Death Mortality Table: A Comprehensive Analysis of Recent Accidental Death Experience"
- Dr. Jacques Janssen, professor, Université Libre de Bruxelles, Belgium, for "Interaction Between Asset Liability Management and Risk Theory"
- Bruce Jones, FSA, assistant professor, University of Western Ontario, for "Random Mortality Rates and the Analysis of Selective Lapsation"
- Dr. Vladimir Kalashnikov, Moscow State University, for "Bounding and Asymptotic Behavior of Ruin Probabilities in Collective Risk Theory"
- Shuan Wang, ASA, assistant professor, University of Waterloo, for "An Actuarial Index of the Right-Tail Risk"
- Virginia Young, FSA, assistant professor, University of Wisconsin-Madison, for "Credibility Using a Loss Function from Spline Theory: Practical Considerations"

New grant applications are now being accepted, with a December 2, 1996 deadline. Resulting grants, if any, will be announced by April 1, 1997.

Ph.D. grants

Eight $10,000 Ph.D. grants are being sponsored by the Casualty Actuarial Society, the Society of Actuaries, and various SOA Sections. They aid graduate students writing theses with relevance to actuarial science. They are also intended to encourage doctoral students to pursue academic careers in North America.

Five students were selected from 21 candidates to each receive a $10,000 grant, renewable up to three times upon evidence of satisfactory progress. They are:

- Diane Bédard, University of Montreal, for "Modeling of Stochastic Interest in Pension Funding," funded by the SOA Pension Section
- Claire Bilodeau, University of Waterloo, for "The Ownership of the Pension Plan Surplus"
- Hong Dai, University of Connecticut, for "Measuring and Analyzing the Volatility Risk in Individual Disability Income," funded by the SOA Health Section
- Richard Gorvett, University of Illinois, for "Dynamic Financial Analysis of Property-Liability Insurance Companies," funded by the CAS
- Emiliano Valdez, University of Wisconsin, for "Relative Importance in Multiple Decrement Models"

The following have received renewal grants of $10,000 for the 1996-97 academic year:

- Soo Hak Hong, University of Nebraska, for "Insurance and Economic Growth; Theoretical and Empirical Investigation"
- Mary V. Kelly, University of British Columbia, for "An Economic Analysis of the Property-Casualty Insurance Market"
- Ken Seng Tan, University of Waterloo, for "Quasi-Monte Carlo Methods and Other Related Methods in Actuarial Science and Numerical Finance," funded by the SOA Investment Section

For information on research grants, call Kathie Allison in the SOA Research Department, 847/706-3574.

SOA continuing education calendar

October 27-30	Annual Meeting	Walt Disney World Dophin, Orlando, Florida
November 11-12	Asset Liability Management	Scottsdale Hilton, Scottsdale, Arizona
November 18-19	Critical Issues in Underwriting	Ritz-Carlton, Buckhead, Georgia

Completed theses in SOA library

Thesis papers completed through the Ph.D. grant program are on file in the SOA's library. There is limited access to these thesis papers. For more information, contact Ellen Bull, SOA librarian, at 847/706-3575 or 3538. Abstracts of most of these papers are available in the Research Library of Actuaries Online.

Following is a list of the thesis papers and their library call letters:

"Identifying Life Insurer Financial Distress: Parametric and Nonparametric Classification Models, Insolvency Theories and Empirical.Evidence," James Carson, University of Georgia, 1993. (HG 8850.C3)

"Dependent Contracts in Credibility Models and Parameter Estimation," Hélène Cosette, Ciaco, Louvain-la-Neuve, 1996. (HG8781.C82)

"Stochastic Models of Interest Rates in Actuarial Science," Siu-Wai Lai, University of Wisconsin, Madison, 1995. (QA 274.L1)

"Classical Risk Theory and Schmitter's Problems," Etienne Marceau,Ciaco, Louvain-la-Neuve, 1996. (HG8781.A251)

"Informed Trading and Option Pricing," Hal Pedersen, Washington University, 1995. (LD 5791.8 .P43)

"A Hierarchical Bayesian Model of the Rate of Non-Acceptable In-Patient Hospital Utilization," Marjorie Rosenberg, University of Michigan, 1994. (QA 279.5.R72)

"Continuous Time Models of the Reporting and Cost Process," Giuseppe Russo, University of California, Berkeley, 1995. (HG173 .R91)

"A Consideration of Certain Statistical Problems Involving Econometric Models With a Linear Structure from a Bayesian Perspective," David Scollnik, University of Toronto, 1992.QA 279.5 .S38

"Recurrence Equations and Insurance Risks Computing," Shaun Wang, University of Waterloo, 1993. (HG 8781 .W3)

Understanding regulatory actuaries (continued from page 4)

- *Avoid delays by removing the black boxes whenever possible.* Sam Gutterman's article, "The Actuarial Black Box" (*The Actuary*, January 1996), defines a black box as "acturial analysis [that] has not been adequately explained." The article does a good job in explaining what should be done. Most actuaries will open these black boxes when asked. A few, however, just turn the box around. Sometimes, one gets caught in what I call the "actuarial black hole." This is when the actuary who created the black box is so convinced it's right that he or she just cannot see the inconsistency in the filing.
- *The filing approval process takes time.* Remember queuing theory? This applies here. Those familiar with the queuing process of medical claims know that a claim has to wait its turn. So does a filing.

Craig S. Kalman is health actuary for the Missouri Department of Insurance. He can be reached by e-mail at 74262.2543@compuserve.com.

Correction

In the September issue, a story on page 20 announcing a presentation at the SOA annual meeting of the preliminary results of a research project on financial derivatives contained three misspelled names. Panelists discussing the project at the SOA's annual meeting this month will include Larry Gorski, a state insurance regulator; Thomas McAvity, who will offer a perspective from a life insurance investment department; and Lucien Burnett, an investment banker. We apologize for any inconvenience the errors may have caused.

NEWS BRIEFS

US math team takes 2nd

Competing against teams representing a record 75 countries, six U.S. high school students won six medals and took second place at the 37th International Mathematical Olympiad (IMO) held in Bombay, India, July 5-17, 1996. The team had 185 points out of a possible 252 points and was edged out by Romania, which took first place with 187 points. The Gold Medalists were Carl Bosley, Topeka, Kan.; Christopher Chang, Palo Alto, Calif.; Michael Korn, Arden Hills, Minn.; and Alexander Saltman, Austin, Texas. Nathan Curtis, Alexandria, Va., and Carol Miller Silver Spring, Md., were Silver Medalists.

The Society of Actuaries is one of the sponsors of the American Mathematics Competitions, which determines the IMO team winners. Bryan Hearsey, Lebanon Valley College, is the SOA liaison to the Mathematical Association of America.

AERF announces Wooddy scholarship winners

Four college seniors are the winners of the first John Culver Wooddy scholarships given by the Actuarial Education and Research Fund (AERF). The $2,000 scholarships were established by the estate of John Culver Wooddy, a distinguished actuary who wanted to provide funds for the education of worthy students.

The 1996-97 Wooddy recipients are:

- Jonathan Cramer, Elizabethtown College, Elizabethtown, Pa., nominated by Gabriela R. Sanchis
- Derek Dunnagan, University of Illinois at Urbana-Champaign, nominated by Donald R. Sherbert
- Suzette Fleischer, Concordia College, Moorhead, Minn., nominated by James L. Forde
- Aaron Lambright, Purdue University, West Lafayette, Ind., nominated by Carl C. Cowen

Applications were received from 39 schools in Canada and the United States. Curtis Huntington, executive director of the AERF, said the next round of applications will be accepted in the spring of 1997. Undergraduates are eligible if they become seniors (or have equivalent standing) in the semester after the scholarship is awarded, rank in the top quartile of their classes, have successfully completed at least one actuarial examination, and are nominated by a professor at their school.

DFCA Handbook update

The 1996 update of the *Dynamic Financial Condition Analysis Handbook* is now available. To order, please call Cathy Cimo, 847/706-3526. The update costs $15, and the entire *Handbook* with binder is $40.

SOA library reminds members of services, fees

With more than 4,100 books and nearly 200 periodicals, the SOA library can serve as an excellent source for actuaries seeking information.

Members anywhere in the world can borrow books free of charge. Books usually are delivered in a few days. In the U.S. and Canada, books and audio-visual materials may be kept for four weeks; outside North America, six weeks.

Database searches can be conducted for actuaries via Dialog, LEXIS/NEXIS, and OCLC. There is a $25 charge for a basic literature search. Comprehensive searches are charged at cost. The library provides this service for members only. There is no mailing and handling fee.

Periodicals, reprints, and reports are not circulated. However, copies of these and other materials are available. Members are charged a $10 minimum for up to 40 exposures, and 25 cents per page thereafter. The nonmember rates are $20 and 50 cents, respectively. For example, a member requesting one copy would pay $10; 40 copies, $10; and 41 copies, $10.25. No mailing and handling fees are charged for U.S. and Canadian addresses. Outside North America, members are charged 50% of the photocopying total for postage and handling. To receive a fax, there is a $10 minimum plus $1 per page (for nonmembers, $20 plus $1 per page). So for members, a one-page fax costs $11, a 15-page fax $25, to give two examples. Photocopying and faxing require prepayment by MasterCard, Visa, or check.

Users of the SOA's library will get the most benefit by submitting their requests in writing either by fax or through the mail. Telephone calls are welcome; however, the volume of calls sometimes causes delays in reaching library staff.

The library is open from 9 a.m. to 4:30 p.m. Central time, Monday through Friday.

To obtain a helpful fact sheet on the SOAs library services or for other information, call the SOA research librarian, Ellen Bull (847/706-3538 or 3575; fax: 847/706-3599).

Genetic testing article available

Insurers are concerned about legally-imposed limits on genetic testing. How genetic testing is defined and the implications for legislative activity are discussed in an article by Donald C. Chambers, M.D., senior vice president and chief medical director of Lincoln National Reinsurance.

In his article, "On defining the genetic test," Dr. Chambers offers some definitions of genetic testing, discusses how they have been incorporated into selected laws, and reviews the impact of the increasing belief that all disease is genetic. Dr. Chambers proposes a four-part spectrum of genetic disorders and six test categories related to them.

A reprint of the 8-page article can be obtained from Dr. Chambers at Lincoln National (219/455-3534; fax: 219/455 6650).

DEAR EDITOR

Reader finds article inconsistent

Robert L. Brown (*The Actuary,* "The Canadian social security solution," April 1996) argues that funding the rapidly growing Canadian social security obligations is no solution. I'm not sure I can follow his logic.

He argues that social security is a method by which society "divide(s) GNP between workers and retirees," and that "pre-funding of social security has no real meaning." But he also argues that a pension scheme (by implication, funded) enables an individual to "transfer consumption over time, from one's working years to one's retirement years." If every Canadian belongs to a pension fund providing benefits at social security levels, there seems to be an inconsistency in his logic.

I think the immediate problem is with his definition of "funding." The investment vehicle discussed — provincial government bonds, which allow the provinces cheap financing — fails my definition of funding on several counts:

- It is inadequately diversified, being totally invested in one class of Canadian security, and with nothing invested outside Canada.
- It does not provide a fair market return.
- I am willing to bet it is a significantly sub-optimal investment vehicle, bearing in mind the liability structure of the Canadian social security system.

Of greater concern to me is his apparent rejection of replacing the C/QPP with a Chilean-like individual defined contribution scheme. Instead he says the "easy solution" is to raise the age of entitlement for social security in a way that results in a constant ratio of wealth production and wealth transfer.

Easy to say, hard to do, when the pressure is on earlier and earlier retirement as traditional jobs disappear. Also the emerging new ways of working pose significant difficulties for many, particularly older, would-be workers.

I think the best solution is both funded arrangements (à la Chile, Australia) and politically sustainable changes in social security programs. Of course, funded arrangements don't guarantee entitlement to the desired goods and services when you retire. If too many are relying on savings and too few are producing, there'll inevitably be problems—inflation, strikes, or other social/economic upheaval. I would argue that funding gives you a much better chance of having a retirement income system that is sustainable in the long run than pay-as-you-go.

The trouble with PAYG is that it enables benefit "promises" to be made and sustained politically for quite long periods, despite being eventually unrealistic. The "pension time-bomb" in Europe is much worse in countries with largely PAYG systems (e.g., Spain, Italy, France) than it is in countries with more reliance on funded systems (e.g., U.K. and, to some extent, the Netherlands). The extended and disruptive strikes last year in France were largely reactions to attempts to make some initial changes to the retirement income systems. As much of Europe eventually goes "cold turkey" from PAYG financed retirement systems, "you ain't seen nuttin' yet."

Retirement income planners could do worse than to look at the Chilean and Australian models. The latter, with which I am most familiar, has been heavily reliant on, inter alia, a strong political will applied over a long period (13+ years). The ultimate irony is that, just when considerable interest is being shown around the world in the Australian approach (e.g., by the World Bank and the U.K. Labor Party), it may be about to change, due to the recent change of government in Canberra.

Christopher J. White

April author responds

Christopher White raises a number of interesting issues in his letter to the editor. His remarks are similar to those I often get from private pension actuaries.

It is often difficult to switch gears from micro- to macro-economic theory. Many things that are true for an individual do not project to truths for an entire population. This is often referred to as the fallacy of composition. For example, if I am having trouble seeing a performer at a concert, then I can solve that problem by standing up. But if everyone stands up, then I am no better off.

Similarly, if one person buys a bond, then that person has a "real" asset with real value that can be used — by one person — to fund retirement. But if everyone in the entire nation buys bonds to back their macro-pension (e.g., C/QPP or OASDI), then they do not have "real" assets; they only have a demand on the output of the next generation of workers. Hence the plan, even if apparently "funded," is still actually pay-as-you-go. That was the point of my April article.

If we live in a stationary, or even a stable, demographic environment, then the above discussion may only be academic (which most people translate as something pretty useless). However, if a large segment of the population tries to retire in a short period of time, and especially if the next generation of workers is a lot smaller, then the above discussion really is important.

What is the real value of stocks and bonds when everyone is trying to sell their assets and fund consumption? The answer is that pension funds are only as healthy as the productive capacity of the economy when we try to retire. Whatever goods and services the retired population wants to consume must be produced — and produced just prior to consumption.

These arguments are critically important to the four countries of the world that had the baby-boom/baby-bust tidal wave: Canada, Australia, New Zealand, and the

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Dear Editor (continued from page 17)

United States. It is not nearly so important to Britain and much of Western Europe, where the demographic shift in the ratio of retirees to workers will not be so pronounced.

As Christopher White observes, "Funded arrangements don't guarantee entitlement to the desired goods and services when you retire. If too many are relying on savings and too few are producing, there'll inevitably be problems — inflation, strikes, or other social/economic upheaval."

I agree. Further, whether it ever becomes stated government policy or not, the result of these pressures in the four countries will inevitably be delayed retirement for part of the population until the consumption-demand side of the equation balances with the production-supply side. It is inevitable that after 2015, you will see as many articles about planning for later retirement in these four countries as about early retirement.

Would funding social security help? Yes, but only if all the following three criteria are satisfied:

- The result must be increased Gross National Savings.
- These savings must successfully increase worker productivity.
- A more efficient way to do this (e.g., mandatory employer-sponsored pension plans) does not exist.

In Canada and the United States, social security provides only a 40% replacement ratio for workers at the average industrial wage. Thus, it does not negate the need to save for retirement. (In fact, many authors say that it helps.) So what is true for France, Spain, and Italy may be meaningless here.

Thanks for the great discussion on this topic, which has a dearth of literature in the actuarial bibliographies. Pity!

Rob Brown

It's the principle of the thing

Recently an SOA bulletin headed "PRINCIPLES" appeared in my mail and invited comment on that subject. This is a topic that deserves more attention because it is not easy to define a principle, as efforts over the years have demonstrated.

I was on the seminal Principles Committee headed by Bob Lindsay,

IN MEMORIAM

John Archer
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FSA 1954

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FSA 1964, MAAA 1965

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ASA 1961, MAAA 1966

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FSA 1965, MAAA 1965, EA 1977

David W. Groathouse
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ASA 1934, MAAA 1966

Pierre Roy
FSA 1956

Carl W. Solenberger
FSA 1944, MAAA 1965

Edward H. Wells
FSA 1939, MAAA 1965

* * *

Charles Barry H. Watson
FSA 1959, MAAA 1965, FCIA 1966, FCA 1973, AIA 1973, EA 1976

Barry Watson, who died September 22, made his mark early in his actuarial career. He achieved his ASA in 1956 and his FSA in 1959, passing every exam on the first try with a score of 10.

He went on to serve the profession with distinction. He was the Society of Actuaries' first executive director, serving from 1968-72. He was a consultant with The Wyatt Company in Washington, D.C., until his retirement in 1992. He was on the SOA Board of Governors from 1974-77, its historian from 1975-76 and a vice president from 1980-82. For the past 30 years, he had served on many SOA education and examination, research, and principles committees and task forces. At the time of his death, he was chair of the Committee for Research on Social Concerns. He was a frequent presenter at actuarial meetings and wrote for several actuarial publications.

He was a tireless promoter of the profession internationally, serving on the SOA Committee on International Relations and as chair of the International Section Council. He represented the United States on the International Actuarial Association Council for many years. He was also one of the organizers of the International Forum of Actuarial Associations, established in 1995.

He also was active in other actuarial organizations, serving most recently as an American Academy of Actuaries vice president, responsible for the Council on Professionalism, and as chair of its Committee on Qualifications. He had also been on its Board of directors and served as secretary in the 1970s. He served as president of the Conference of Actuaries in Public Practice (now Conference of Consulting Actuaries) in 1977-78. He also was chair of the Actuarial Education and Research Fund and served on its board for many years.

Those wishing to make donations are asked to give to the AERF (send donations to the SOA office) or So Others Might Eat, 71 "O" Street NW, Washington, D.C., 20001.

which gave me the opportunity to think through what a principle is and to reach a conclusion.

Here is the result. A principle is, perhaps unfortunately, often best stated in the negative. A good example of a set of principles is the Ten Commandments. Consider only one: Thou shalt not kill. That is a principle, clearly and succinctly stated, needing no elaboration. Or does it? What about killing in a just war, which on its face violates this principle? And what about self-defense and accidents? Society needs something else to sanction certain killings and to except others from punishment.

Enter standards. Society determines what constitutes a killing and what doesn't. Further, it distinguishes between various kinds of punishable killing — murder in various degrees, vehicular homicide, manslaughter, murder of a policeman or president. The latter are not principles. They are standards related to that principle.

Thus, principles are general while standards are specific. Standards help define violations of principle, because multiple standards probably constitute one principle.

A good rule is, "If you can't express it in a simple declarative sentence, it isn't a principle." More likely, it's a standard or a mixture of the two.

I don't think the Lindsay committee finished its work before it was replaced, and its successors have had a difficult time with this "forest and trees" problem. The result is no clear exposition of principles such as we have in the Ten Commandments. Moses had no truck to carry his tablets, for which we should be grateful. Imagine trying to rattle off ten statements along the lines of those emerging from our profession's various committees.

Ardian Gill

Physician (continued from page 7)

management programs focus on episodic hospital-based services and target admission management. These programs will ensure that care is delivered in the most appropriate setting (i.e., intensive care, acute care, subacute skilled nursing facility, or home health care). Future programs will focus on reducing hospital admissions rather than just managing lengths of stay. This approach addresses the need for services, not just where services are best delivered.

The components of comprehensive utilization management programs include pre-admission review, medical necessity determination, concurrent review, and discharge planning. Well-managed programs incorporate practice guidelines, formal technology assessment, and inpatient critical pathways to assure clinical appropriateness and efficient health care delivery. To date, this is where most health plans have concentrated their efforts.

Disease management

Disease management is a relatively recent development. Some view the concept as new, while many contend that disease management is simply a term for continuity of care. Regardless, disease management challenges health plans and capitated integrated delivery systems to manage the delivery of care across the continuum of diseases and health care settings.

Most disease management activity focuses on chronic conditions. The objectives include identifying high-risk individuals and assuring access to the most appropriate providers in the most cost-effective settings. To do this successfully, plans must have information linking patients' clinical and financial data across the various settings of health care delivery — from the enrollment process to ambulatory and institutional-based services to claims processing and reporting. The health care system's fragmented nature and data limitations have made results difficult to measure. The lack of information systems linkages poses the most significant barrier to disease management.

Actuarial challenges

Comprehensive care management strategies will pose many new challenges to actuaries. As these programs evolve, they will obviously have an impact on provider reimbursement methods, product pricing, benefit design, persistency studies, and the analysis of administrative expenses. Historically, actuaries have concentrated their health care analysis on the utilization of procedures and fee schedules. The comprehensive care management strategy will likely move a health system to a more "budget-based" approach from the traditional utilization of procedures.

While capitation appears to be the reimbursement of the 1990s, it may not be the reimbursement of the next century. As health plans realize that capitation does not optimize their operational structure and providers realize that capitation cannot effectively account for the health status of patients, provider reimbursement may eventually evolve to episode or case reimbursement of specific diseases. In this situation, actuaries need enough clinical and financial information to predict the incidence and cost of specific diseases in a given population. More long-term analysis will be required to better understand the cost across the entire health care spectrum.

All actuaries involved in health care will admit that health care products and the underlying provider reimbursement strategies are becoming much more sophisticated. As we move into the next century, it is clear that actuaries and clinicians will need to work much closer together to best analyze the health care data and products of the future.

Brent Greenwood is a principal, practice manager, and consulting actuary and Dr. David Epstein is a consulting physician with Towers Perrin IHC in Atlanta.

April Puzzle solvers

Due to space considerations, the puzzle will not appear this month. The following were 100% solvers of the April issue's Actucrossword:

J. and L. Abraham, B. Alexander, W. A. Allison, A. Amodeo, S. Alpert, D. Apps, A. Atrubin, M. Avila, A. Bailey, K. Baker, J. Balsam and L. Schmerhold, D. Benbow, M. Berman, B. Birns, W. Britton, A. Brosseau, R. and M. Buck, G. G. Cameron, L. Cappellano, Y. Cheng, W. Childress, S. Colpitts, A. Coutts, J. Darnton, B. Dibben, E. Diedrichsen, D. Dobbin, M. Eckman, B. Fardy, S. Field, F. Finkenberg, N. H. Fischer, H. Fishman, R. Fleckenstein and P. McEvoy, D. Fleiss, J. Foley, L. Forbes, A. Ford, B. Fortier, M. Frankel, R. Frasca, N. Franceschine, M. Friedman, K. Friedman, D. Friedrich, R. Fulep and A. Rothberg, F. Funder, J. Gaboury, C. Galloway, A. Garwood, J. Gautier, J. Gladden, E. Goldstick, P. Gollance, E. Gooden, W. Gorski, I. Grabowski, T. Graham, J. T. Grimes, M. Grover, S. Gruhlke, O. Gupta, T. and M. Gustafson, P. Haley, A. Hanson, R. Harder, R. Hayes, R. Hedge, M. Henley, P. Hepokoski, J. Hill, F. and A. Hogan, G. Horrocks, R. Hupf, J. Hunt, T. Inchalik, E. and D. Itkin, M. Jacobs, J. Jakielo, C. Johnson, A. Mascenik, J. Ruckstuhl and W. Snyder, B. Jones, J. Keller, O. Karsten, D. Kendall, D. Keys, M. Kirr and S. McCuaig, B. Klimek, S. Knull, R and J. Koch, D. Kocher, J. Lafarga, L. G. Lana, A. Lang, D. Leapman, K. Leiden, A. Lindner, S. Loffree, B. Long, C. Lostlen, W. Lumsden, M. Lykins and J. O'Connor, M. MacKinnon, D. and S. Magnusson, R. Maguire, P. and D. Mahoney, J. Marks, R. C. Martin, R. May, G. Mazaitis, N. McCaughan, D. McGarry, J. McIntosh, D. McCord, T. Merz, R. Miller, C. Monroe, P. Morse, B. Mowrey, R. Neill, J. Nichols, J. Paddon, J. Palmer, P. Peyser, M. Posner, S. Pozer, D. and C. Promislow, F. Rathgeber, J. Ripps, D. Risberg, M. Ristau, A. Rogers and J. McKee, J. Roszkowski, A. Rotolo, B. Roudebush, J. Sanges, B. Schilmeister, J. Schwartz, S. Segall, L. Self, I. Schaeffer, G. Sherritt, A. Shewan, S. Shotwell, J. Stahl, M. Steinberg, P. Stek, F. G. Swanson, M. Swyers, D. Taub, E. Thompson, D. Treble, D. and L. Uhland, B. and J. Uzzel, M. Vandesteeg & A. White, R. Van Oss, C. Velasquez, H. Wachspress, P. Watkin, Westrop, N. White, M. and D. Williams, R. Williams, R. Wilton and J. Cheney, V. Young, F. Zaret, G. Zayka.

ON THE LIGHTER SIDE

What's the actuarial ticket in November?

I often think it's comical
How nature always does contrive
That every boy and every gal,
That's born into the world alive,
Is either a little Liberal,
or else a little Conservative!

If you know the tune from Gilbert & Sullivan's "Iolanthe," you might want to sing along, perhaps adding some new lines with more political twists. But you don't need to know any songs — or even be a U.S. citizen — to participate in our actuarial poll.

The Actuary wants to know: Who is your choice in this U.S. presidential election year? And for each ticket listed below, what's the probability of winning? (The Libertarian and Reform party candidates are included, even though it was unknown at press time who will appear on the ballot in all 50 states.)

Please fill out the form and fax or mail it to us by October 20. The results will be published in the November issue. Also, watch for this ballot on the SOA Web site after October 14 (http://www.soa.org.).

If I were voting today in the U.S. presidential election, I would vote for:

____ Harry Browne / Jo Jorgensen (Libertarian)
(______% probability of winning)

____ Bill Clinton / Al Gore (Democratic)
(______% probability of winning)

____ Bob Dole / Jack Kemp (Republican)
(______% probability of winning)

____ Ross Perot / Pat Choate (Reform)
(______% probability of winning)

Return by Oct. 20 to *The Actuary*, Society of Actuaries,
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